Scotland's Census 2021
2017 Cognitive and Quantitative Testing

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1.   Main Points

- Questions are thoroughly tested to ensure they produce high quality outputs that meet user and respondent need. In 2017, National Records of Scotland (NRS) commissioned ScotCen Social Research to carry out cognitive and quantitative question testing in Scotland on potential questions for inclusion in Scotland's Census 2021.

- Cognitive interviewing was used to critically evaluate possible census questions. Results from the cognitive testing were used to inform the design of the questions for quantitative testing. In total, 58 interviews were conducted across Scotland. Following the results of cognitive testing, some questions were revised for inclusion in quantitative testing.

- Quantitative testing was performed through a population survey, and completed by adults at selected addresses (rather than a household survey). The survey was open to adults who live at residential addresses in Scotland. In total 3,300 addresses were randomly selected from which 1,454 participants took part.

- Participants were able to complete the questionnaire online or on paper. There were 645 questionnaires completed online and 809 completed on paper.

- The most popular device types for completing the questionnaire online were computers (including laptop devices) accounting for almost 50% of online responses. Around 27% used a tablet device and a further 20% used a mobile device.

- Item non-response is an indicator of data quality and acceptability. In the 2017 Quantitative Test the highest item non-response for a possible census question in the household section of the questionnaire was recorded for the household income question (7.7%). In the individual section of the questionnaire the highest item non-response rate was recorded for the question about health conditions (11.2%).

- Additional information about question development, and detailed results of the 2017 test by question topic can be found on our Question Development pages.

- The final decision on the content of Scotland's Census 2021 questionnaire will be made by the Scottish Parliament.

Introduction

1.1   Topic Consultation, Research and Question Development

National Records of Scotland (NRS) invited views on Scotland's Census 2021 – Topic Consultation between 8 October 2015 and 15 January 2016. Information about this consultation, and the Topic Consultation Report are available on our Consultations page.

The consultation document presented the initial views from NRS on the topics under consideration for collection in the census in 2021, with the aim of encouraging discussion and to help build strong cases to justify the inclusion of topics. The consultation was a key step towards understanding what information users will need from the census in 2021.

In order to develop the question set that will be recommended for inclusion in the census questionnaire, NRS consulted with stakeholders to fully understand both user and respondent needs. We held a number of Topic Events, meetings and focus groups throughout Scotland to publicise our plans for question development, capture more detailed information about user need and determine the quality and acceptability of new questions. Information about our events, meetings and focus groups can be found on our Get Involved pages.

1.2   Question testing

Question testing builds on an extensive programme of work on question development. To be included in the 2021 Census, questions must meet user need, be acceptable to the public and produce good quality data without reducing overall respondent participation.

In addition the aims of testing are to address issues such as:

- question acceptability;
- usability (online and on paper);
- question and guidance wording;
- ordering of the tick boxes; and
- whether new wording or new questions changes the distribution of responses to existing questions.

There are different types of question testing. Qualitative (for example, cognitive interviewing) and quantitative methods are used, and provide different information. Qualitative testing is helpful in providing direct respondents' views on the question and their thought process for choosing a response. Cognitive interviewing was used to provide an insight into the mental processes respondents use when answering questions, helping to identify problems with question wording and questionnaire design. This is described in more detail in Section 3. Quantitative testing provides evidence on data quality such as item non-response, mode and characteristics effects, and indicators of confusion. The quantitative survey included feedback questions to gather further evidence of acceptability of questions and respondents ability to answer easily. This is described in more detail in Section 4.

In 2017, we commissioned ScotCen Social Research to carry out cognitive and quantitative question testing in Scotland. Results of this research will be analysed and considered alongside the full range of evidence gathered during consultations to inform recommendations for the questions to be included in Scotland's Census 2021.

This report summarises the background to the testing and some of the general findings of the 2017 Quantitative Test. Additional information about question development, and detailed results of the 2017 test by question topic can be found on our Question Development pages.

1.3   Question recommendations

The final decision on the content of Scotland's Census 2021 questionnaire will be made by the Scottish Parliament.

As in previous years, there will be separate censuses conducted by the Office for National Statistics (ONS) in England and Wales, and the Northern Ireland Statistics and Research Agency (NISRA) in Northern Ireland. The three census offices will work together to develop a set of questions that, wherever possible and necessary, deliver harmonised outputs across the UK.

2.   2017 Cognitive Testing

2.1   Introduction

In 2017, ScotCen Social Research carried out cognitive testing of possible census questions in Scotland on behalf of NRS. Cognitive testing was performed by holding face-to-face cognitive interviews with recruited participants. Due to the qualitative and in depth nature of cognitive interviews, test samples are designed to reflect the range and diversity of the population of interest, rather than to be statistically representative of the whole population.

The cognitive testing was split into two strands:

1. Strand one

    The main purposes of strand one testing was to explore understanding of key terms, acceptability of content and suitability of response options.

    Strand one included questions on:
    - sex, non-binary sex, gender identity, transgender status and sexual orientation; and
    - income, including household income and personal income.

2. Strand two
    Strand two explored the usability of the online and paper versions of the questions where the online format differed from paper format, acceptability and understanding of wording, and possible data quality issues.

Strand two included questions on:

- central heating;
- tenure and landlord;
- address of and travel to place of work or study;
- religion;
- national identity and ethnic group;
- passports held;
- languages (English, Scottish Gaelic, Scots language, British Sign Language and main language spoken);
- health conditions;
- qualifications held; and
- ex-service personnel status.

2.2 Methodology

2.2.1 How the testing was undertaken

Cognitive interviews were conducted face-to-face by ScotCen researchers and interviewers (one interview was conducted over the phone). Each interview lasted approximately one hour and was audio recorded with the participant's consent.

There are several different techniques that can be used in cognitive interviewing. A mixture of "retrospective probing" and "think-aloud" was most appropriate for this study.

In the think aloud technique, participants were asked to say aloud what they were thinking as they went about answering the question. In this technique questions were asked as the participant was answering the question.

In the retrospective probing technique, questions were asked after the respondents had completed the questions. For the retrospective probing, interviewers were provided with scripted probes to make sure that all areas of interest were covered during the interview.

2.2.2 Sample and respondent selection

In strand one, 26 interviews were conducted across Edinburgh, Glasgow, and Perth and one telephone interview was conducted with a participant living in Aberdeen. This included 12 participants from LGBTI groups. Recruitment was quota based, to ensure communities of interest were involved alongside the general population. Additionally, participants were recruited to ensure diversity in terms of their sex, age, highest education, income, and household composition. More details on the respondent selection process can be found in Annex A.

In strand two, 32 interviews were conducted in Edinburgh, and Glasgow. Due to the content of the questions, participants were recruited to ensure diversity in terms of their: sex, age, highest qualification, religion, ethnic group, computer skills, tenure, armed forces status, whether participants held a UK passport, have any health conditions, and speak English at home. More details on the respondent selection process can be found in Annex B.

Table 1. Overview of strand one and two cognitive testing

Strand 1	Strand 2
Questions tested	
• sex, non-binary sex, gender identity, transgender status and sexual orientation • income, including household income and personal income	• central heating • tenure and landlord • address of and travel to place of work or study • religion • national identity and ethnic group • passports held • languages (English, Scottish Gaelic, Scots language, British Sign Language and main language spoken) • health conditions • qualifications held • ex-service personnel status
Areas explored	
• understanding of key terms • acceptability of content • suitability of response options	• usability of the online and paper versions of the questions particularly where the format differed by mode (online/paper) • acceptability and understanding of wording • possible data quality issues
Sample size	
In total, 26 interviews were conducted in Edinburgh, Glasgow and Perth and one telephone interview with a participant living in Aberdeen.	In total 32 interviews were conducted in Edinburgh and Glasgow.

3.   2017 Quantitative testing

3.1   Introduction

In 2017, ScotCen Social Research carried out quantitative testing of possible census questions in Scotland. The questions carried into quantitative testing were revised based on the cognitive testing findings.

Testing was performed through a population survey, completed by adults at selected residential addresses. As the purpose of the testing was to understand individuals responses to questions and the impact on data quality, an individual survey was used, rather than a household survey. Addresses were randomly selected and participants were able to complete the questionnaire online or on paper.

The following questions were included for quantitative testing:

- sex;
- trans status (terminology was revised following cognitive testing);
- sexual orientation;
- household income;
- central heating;
- tenure and landlord type;
- address of and travel to place of work or study;
- religion;
- national identity and ethnic group;
- passports held;
- languages (English, Scottish Gaelic, Scots language, British Sign Language and main language spoken);
- health conditions;
- qualifications held; and
- ex-service personnel status.

The main purposes of quantitative testing were to:

- test the impact of inclusion of new questions and modified questions on overall response rates;

- investigate item non-response rate as a measure of data quality and acceptability;

- investigate invalid responses, including routing errors and multi-ticks, as a measure of data quality;

- test comparability of responses between the online and paper versions of the questionnaire; and

- investigate the distribution of responses, including similarities and differences when compared to the 2011 Census, by mode (online or on paper), age, sex and by other appropriate analysis variables.

A number of questions were included as additional analysis variables or for operational purposes. These included: whether or not respondents lived in a communal establishment, number of people in household, number of dependent children in household, household composition, age, marital status, student status, and country of birth.

In addition, feedback questions were included to gather information about whether respondents found particular questions difficult to answer and provided respondents with space to give reasons for this difficulty.

The paper version of this questionnaire is included in Annex C.

3.2   Methodology

3.2.1   Sample and fieldwork

The survey was designed to provide a representative sample of adults aged 16 or over, living at residential addresses in Scotland. The sample frame was the Postcode Address File (PAF). The survey required an issued sample of 3300 unclustered PAF addresses, and was designed to yield 1000 adult survey responses. The sample was filtered to exclude areas selected for any previous census testing, and non-residential addresses were excluded, where possible. For each issued address, four participants aged 16 or over were invited to take part. Number of adults living in the household was collected at the start of the survey to aid weighting.

All PAF addresses (expanded by the Multiple Occupancy Indicator (MOI) were sorted by: (a) Scottish Government's 6-fold urban-rural classification[1] of the address's data zone; (b) 6-fold regional classification[2], (c) Scottish Index of Multiple Deprivation (SIMD) of the data zone; (d) postcode; and (e) print address. Addresses were then selected systematically from across the sorted list. This allowed analysis by urban-rural geography and level of deprivation.

In total, 3300 addresses in Scotland were randomly selected and invited to take part in the study.

Invitation letters were sent to selected addresses on 15 November 2017, and contained a link to access the survey online, along with four unique survey access codes. The invitation letter also contained details on how participants could request a paper copy of the questionnaire if preferred. The invitation letter is included in Annex D.

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[1] Urban-rural classification:
- (A)   Large Urban Areas
- (B)   Other Urban Areas
- (C)   Accessible Small Towns
- (D)   Remote/Very Remote Small Towns
- (E)   Accessible Rural Areas
- (F)   Remote/Very Remote Rural Areas

[2] Regional classification:
- (1)   Postal areas G, ML ("Glasgow and Lanarkshire")
- (2)   Postal areas KA, DG, TD ("Ayrshire, Dumfries and Galloway, Borders")
- (3)   Postal areas EH, FK ("Lothian and Central")
- (4)   Postal areas KY, DD, AB ("Fife, Dundee and Grampian")

Postal areas PA, PH, IV (parts) ("Rest of Scotland (south of the Caledonian Canal)")

After a week, each address received a reminder letter (Annex E) with the survey link and four unique access codes. Subsequent reminders were mailed out on a weekly basis thereafter. Reminder two was sent to all non-responding households. It contained a letter with the survey link and four unique access codes along with two paper copies of the questionnaire (Annex F). Reminder three, also mailed to all non-responding households, contained a letter with the survey link and four unique access codes, as in reminder one (Annex G).

The final reminder contained a letter with the survey link and four unique access codes plus one paper copy of the questionnaire. This reminder was sent to all responding households where only one individual had responded and their survey response to the question on household size indicated that it was larger than one (Annex H). Reverse of all remainder letters can be found in Annex I.

Fieldwork closed on Friday, 22 December 2017 for paper returns and Tuesday, 2 January 2018 for online returns. Paper responses returned after the end of fieldwork were considered as late postal returns. The fieldwork schedule can be found in Annex J.

The target number of individual responses for the study was 1000. In total, 1530 responses were received from across Scotland.

In addition 120 late postal returns were received after fieldwork closed. These late responses were analysed by NRS to ensure that they did not represent any particular groups of the population. No obvious pattern was found to late postal returns, and these were excluded from analysis.

3.2.2   Quality assurance

Ideally a sample is representative with respect to all variables of interest in the survey. Problems such as non-response or multiple responses may cause under or over representation of certain groups. If these occur no reliable conclusions can be drawn from observed data.

Quality assurance processes removed a number of records from the analysis:

- Duplicate records

  The sampling and field work approach resulted in a small number of duplicate responses. Four access codes were included in the invitation letter, and there were no barriers to respondents to requesting more or filling in both an online and a paper questionnaire. Forty six records were identified as duplicates, and removed from analysis.

- Communal establishments

  Seven responses were received from individuals living in communal establishments. There are many different types of communal establishment, including care homes, prisons, boarding schools, student halls of residence etc. The sample frame excluded known communal establishments, therefore these records were excluded as not eligible for the survey. The main reason for excluding communal establishments from the sample frame is that it is difficult to adjust for differences in response rates and thus calculate correct weights for these types of accommodation.

- Web drop outs

  A number of respondents (22) dropped out of the survey at the initial pages, such as password setup. These respondents did not provide a response to any of the questions and so have been excluded from analysis. Any respondent who responded to at least one of the questions is included in the analysis.

In addition, 120 late responses were received. No obvious pattern was found to late responses, and these were excluded from analysis.

Following quality assurance, the final sample consisted of 1454 adults at addresses in Scotland.

3.2.3   Weighting

To adjust for differences in address and individual response, weighting was applied to the sample.

To reduce bias caused by differences in information about address non-response, the probability of an address/household to respond was estimated via a logistic regression model. The final model included the following variables which were identified as significant in predicting the number of completed surveys returned: SIMD quintile, household size, the interaction between the urban/rural indicator and mode of data collection, and the interaction between mode of data collection and receiving a paper questionnaire in the reminders. Communal establishments (and therefore communal establishment residents) were excluded from the sample because of the additional difficulties in weighting the response rates for these address types.

To reduce the non-response bias of individual responses, calibration weighting was applied. Calibration weighting adjusted the household-level weight so that the weighted achieved sample matched the 2017 Mid-Year Population Estimates (MYE) of Scotland by age and sex.

Detailed information about weighting can be found in Annex K.

4.   Key Findings of the 2017 Quantitative Test

4.1   Overall Response rate

The target number of individual responses for the study was 1000. In total, 1530 responses were received from the 3300 selected addresses across Scotland. Following quality assurance, the final sample consisted of 1454 adults at addresses in Scotland, 454 in excess of the 1000 target.

4.1.1   Online response

An online response was received from 511 addresses, representing an address level response rate of 15.5%. This includes respondents who dropped out at the password set stage.

An average of 1.75[3] adults per household was used to estimate the number of adults in sampled addresses. It was estimated that 5775 adults aged 16+ lived in the 3300 sampled addresses. Online questionnaires were completed by 645 adults indicating a person-level response rate of 11.2%.

It is possible that a small proportion of non-responding households included ineligible addresses for this survey (communal establishments or non-residential addresses)[4].

Once likely ineligible figures were accounted for the final online address response rate was 16.8% and the final online person level response rate was 12.1%.

4.1.2   Paper response

Paper questionnaires were completed by 809 adults. Addresses could request extra paper questionnaires at any point during the fieldwork period. Additionally paper questionnaires were included with remainder letters. In total, 104 addresses requested a total of 144 paper questionnaires to be posted to their address (around 3% of the issued sample). Eighty per cent of questionnaires requested were completed and returned.

4.1.3   Combined online and paper response

The 645 online responses and the 809 paper responses gave a combined total of 1,454 responses, 454 in excess of the 1,000 target. After accounting for likely invalid addresses, the overall household level response rate was 36% and the overall person level response rate was 25%.

4.2   Full and partial completions

The purpose of this testing was to investigate acceptability and data quality of potential questions for inclusion in Scotland's Census 2021. Therefore respondents were allowed to withdraw from responding at any point.

In this study a questionnaire was either classified as partially completed or fully completed, depending on the progression of the individual through the questionnaire:

- Partially completed – respondent answered some/all questions up to and including question 12 – *"What is your legal marital or same-sex civil partnership status?"*
- Fully completed – respondent answered some/all questions including question 13 - *"Which of the following options describes how you think of yourself ?"* or beyond.

Participants had the choice to complete the questionnaire online or on paper. Nearly all (95%) of the 645 online questionnaires were fully completed. Five per cent of online responses were classified as partially complete. All paper questionnaires were fully completed.

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[3] An average of 1.75 adults per household in Scotland was estimated in the 2011 Census.
[4] Invalid addresses were verified during the data validation stage. 76 participants were removed after validation checks were completed.

The most common point for those with partially completed questionnaires to drop out was the income question, with 15 of the 35 partially completed questionnaires ending at this point. There were no other clear or obvious drop out points, as shown in Table 2.

Table 2: Last question asked for partially completed questionnaires (weighted)

Last question answered	Number of drop outs (weighted)	Percentage of partial completions (weighted)
Q9. Age	4	11.8 %
Q1. Residence type	3	7.4 %
Feedback 1: Q1 to Q8	3	8.2 %
Q4. Household composition	3	8.0 %
Q5. Income	15	42.6 %
Q12. Marital status	2	4.5 %
Q13. Sexual orientation	1	2.9 %
Q2. Household size	2	5.1 %
Q7. Tenure	3	9.5 %
Total	**35**	**100.0 %**

4.3   Response rate by demographics

After weighting, 50% of respondents identified as 'female' and 46% as 'male', as shown in Figure 1 and Table M1. These proportions are similar to the 2017 MYE, where females accounted for 52% and males for 48% of the total population in Scotland. However it should be noted that the sample distribution is not directly comparable because there were respondents in the sample who did not respond to the age question or provided an invalid answer (2.9% of the sample).

Figure 1: Response by sex versus mid-2017 Population Estimates
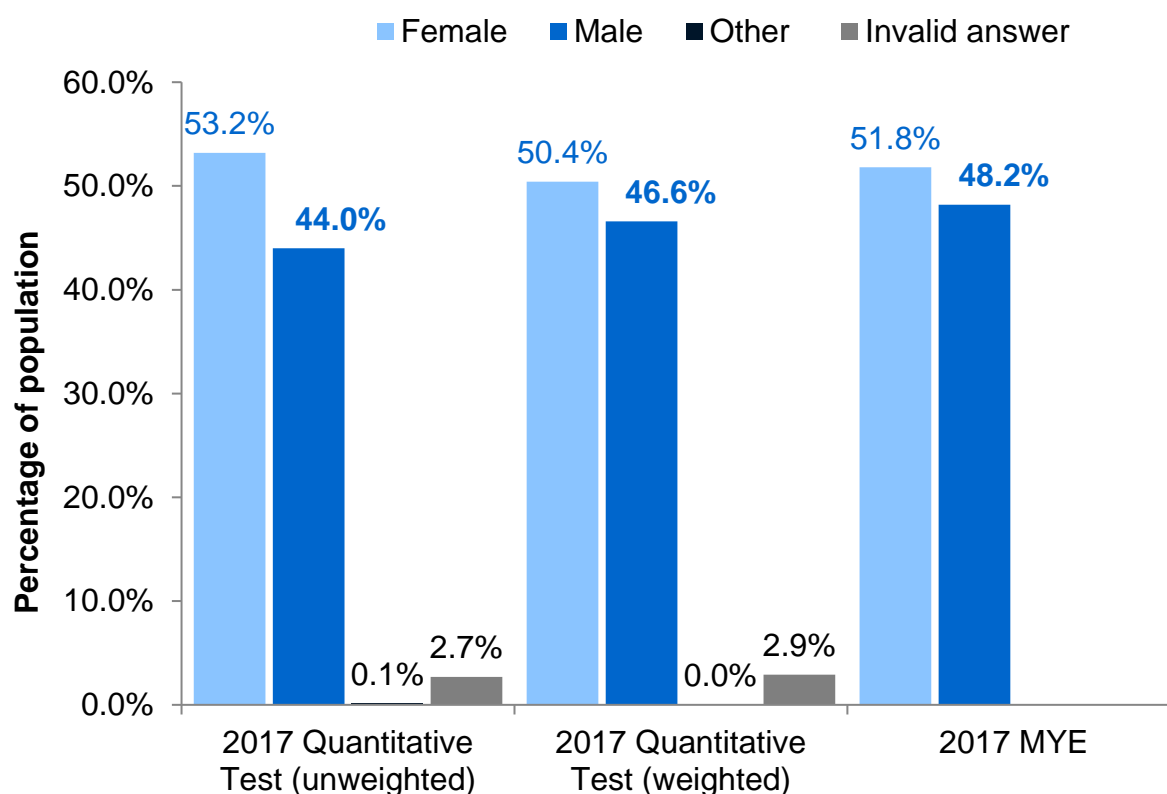
Figure 2 and Table M2 show the un-weighted and weighted distribution of response rates by age group for the 2017 Quantitative Test and 2017 MYE.

In general, the weighted age distribution of the 2017 Quantitative Test follows the distribution of the 2017 MYE, with the exception of those aged 16 to 34. There were 6% more 25-34 year olds and 5% less 16-24 year olds in the 2017 Quantitative Test than in the 2017 MYE.

Question four in the household section of the questionnaire asked participants to describe their household composition. Figure 3 and Table M3 show that around a quarter of respondents stated that they lived in a single person household. Over 60% lived in a household as a couple with or without children. Around 6% lived in an 'other' type of household without children, and a further 1% lived in an 'other' type of household with children.

Figure 2: Response by age versus mid-2017 Population Estimates
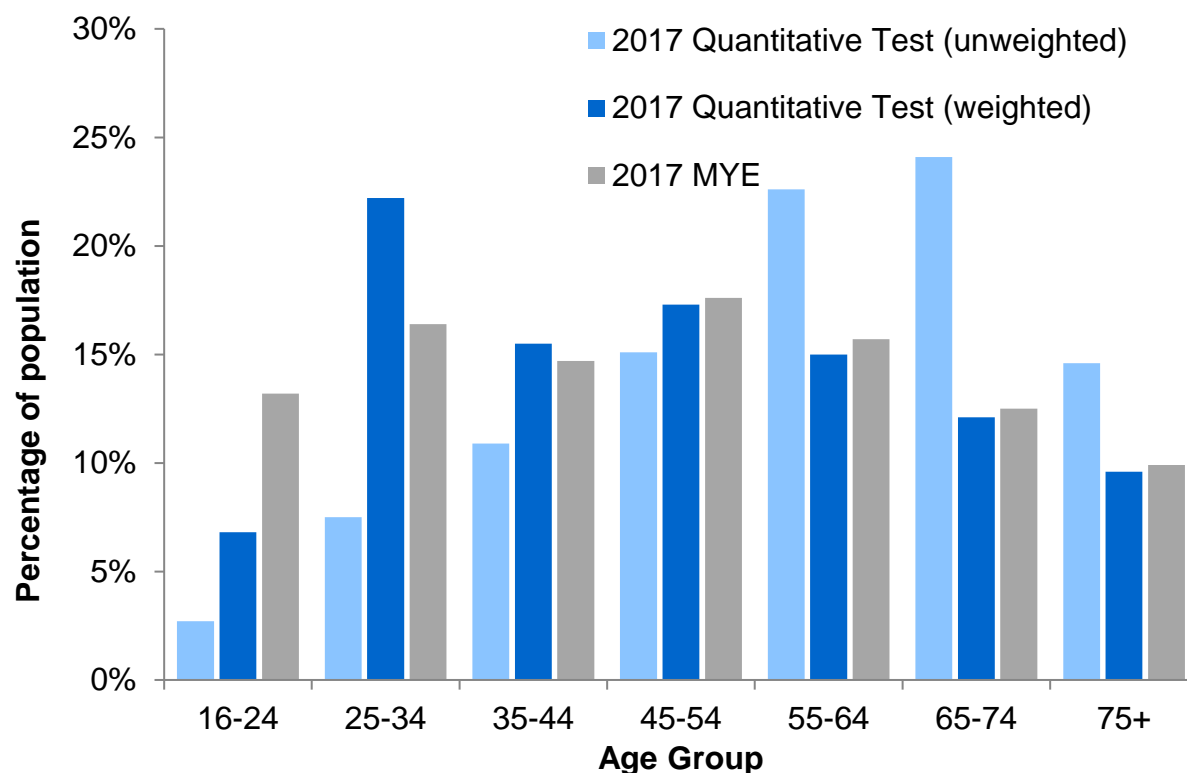
Figure 3: Response by household composition
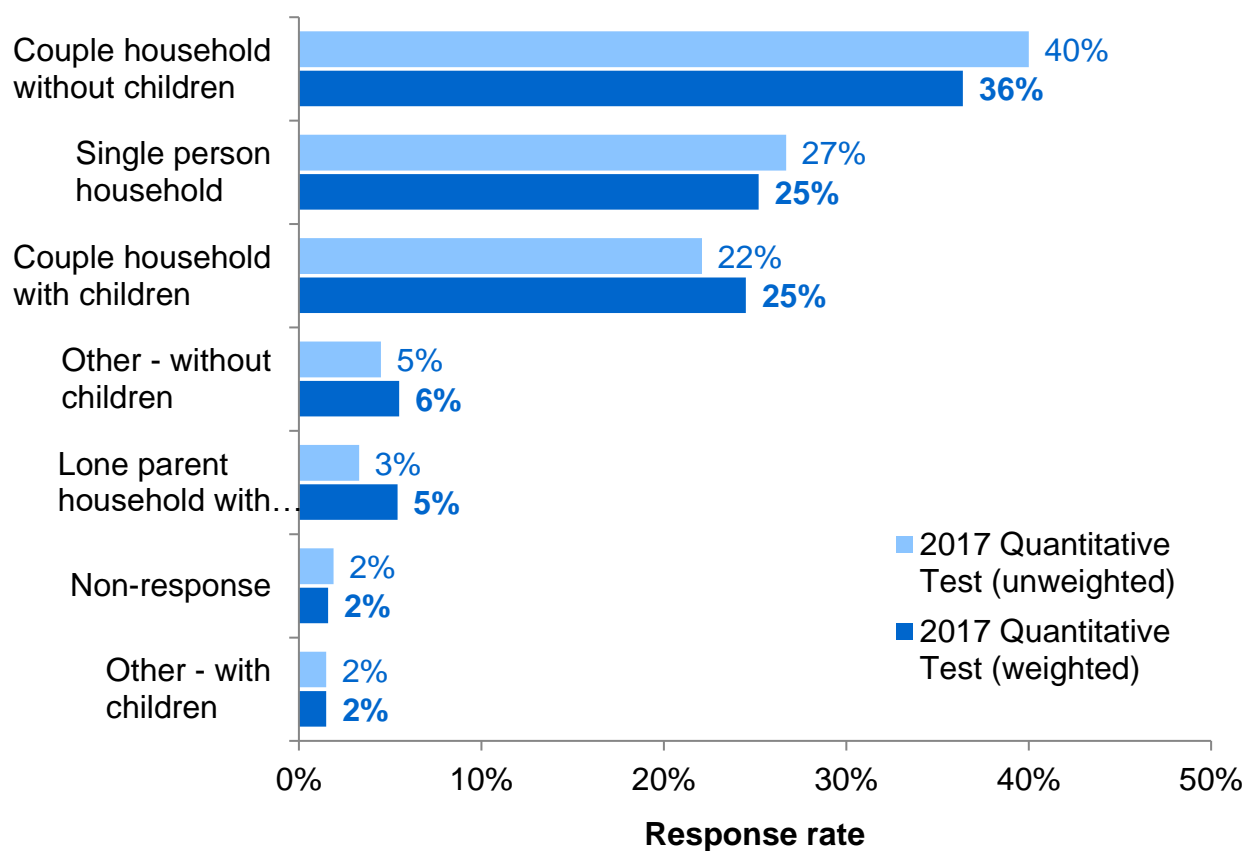
As shown in Figure 4 and Table M4, 14% of the responding sample (un-weighted) lived in Scotland's most deprived quintile. After weighting, this group accounted for around 23% of the sample. Response among quintiles two to four was similar while those living in Scotland's least deprived areas were slightly more likely than those living elsewhere to participate.

The pattern in response by area deprivation (using the Scottish Index for Multiple Deprivation (SIMD)) is very similar to that seen in large-scale social surveys across Scotland. It is often the case that those living in the most deprived areas are under-represented and this was the case here.

Figure 4: Response by Scottish Index for Multiple Deprivation
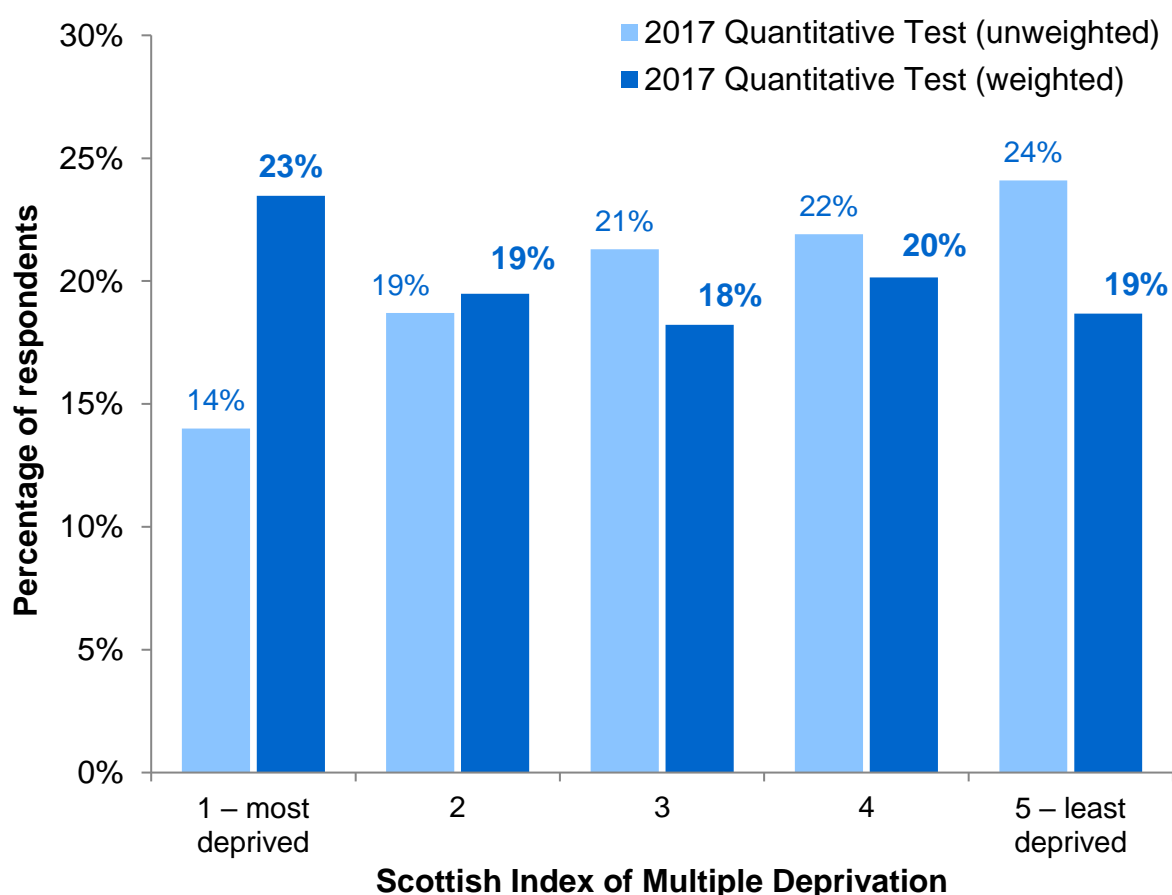
Figure 5 and Table M5 show the distribution of responses by urban or rural area type (6-fold classification). Approximately 16% of the sample lived in rural areas (remote rural and remote small towns). Thirty-nine per cent of the responding sample lived in accessible rural areas and a lower proportion lived in accessible small towns (34%). Eleven per cent of participants lived in either large urban areas or other urban areas.

Figure 5: Response by response by Urban/Rural (6-fold classification)

Urban/Rural (6-fold classification)
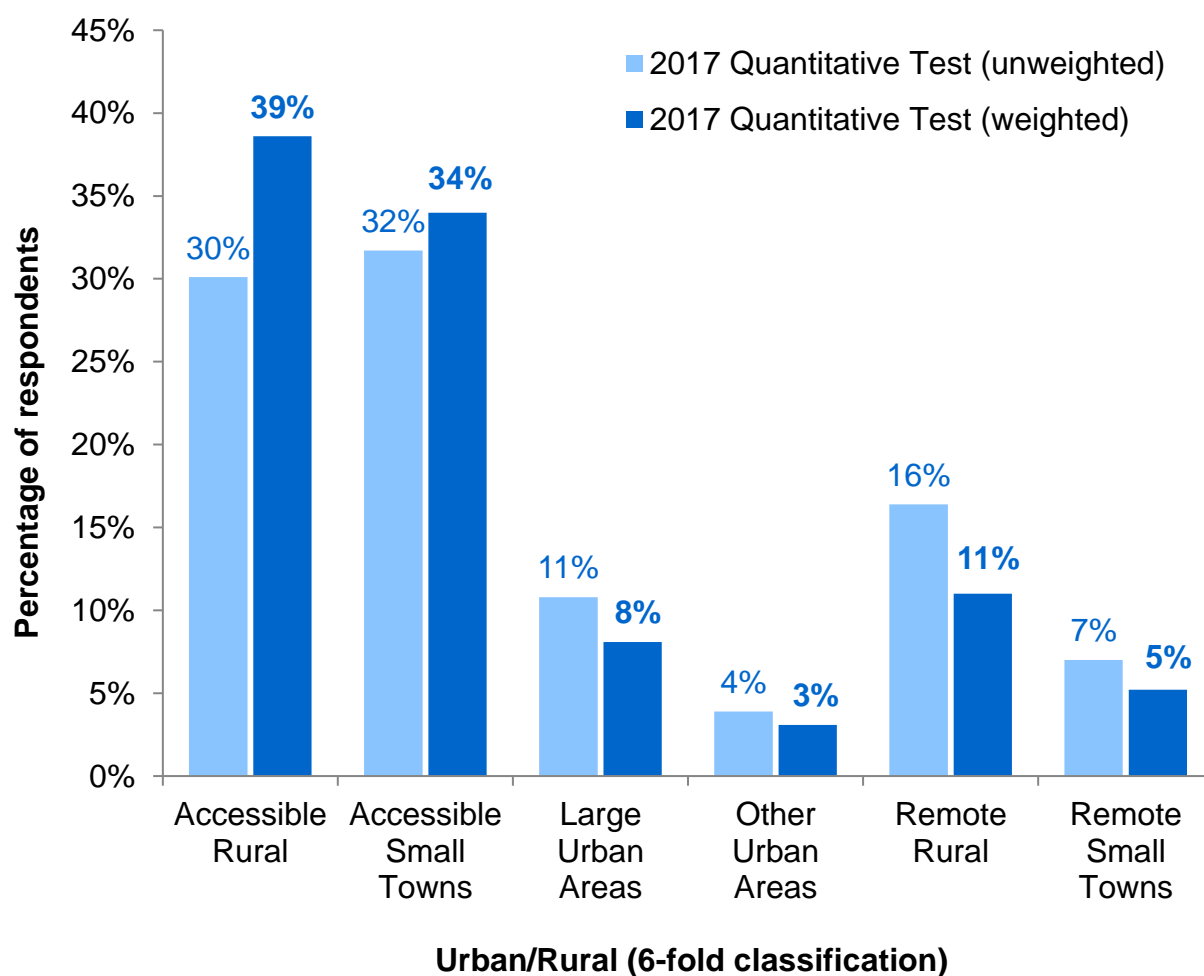
4.3.1   Item non-response

Figure 6 and Table M6 show the item non-response rates for the household questions in the 2017 Quantitative Test and the item non-response for census questions in the 2011 Census. The highest item non-response rate was recorded for the question about household income (7.7%). Central heating, tenure, household composition, size of the household, and landlord type achieved higher response rates, with item non-response rates of 2.8%, 2.7%, 1.6%, 1.2% and 0.5% respectively.

Figure 6: Item non-response rate (weighted) to questions in the household section of the questionnaire versus 2011 Census item non-response[5]
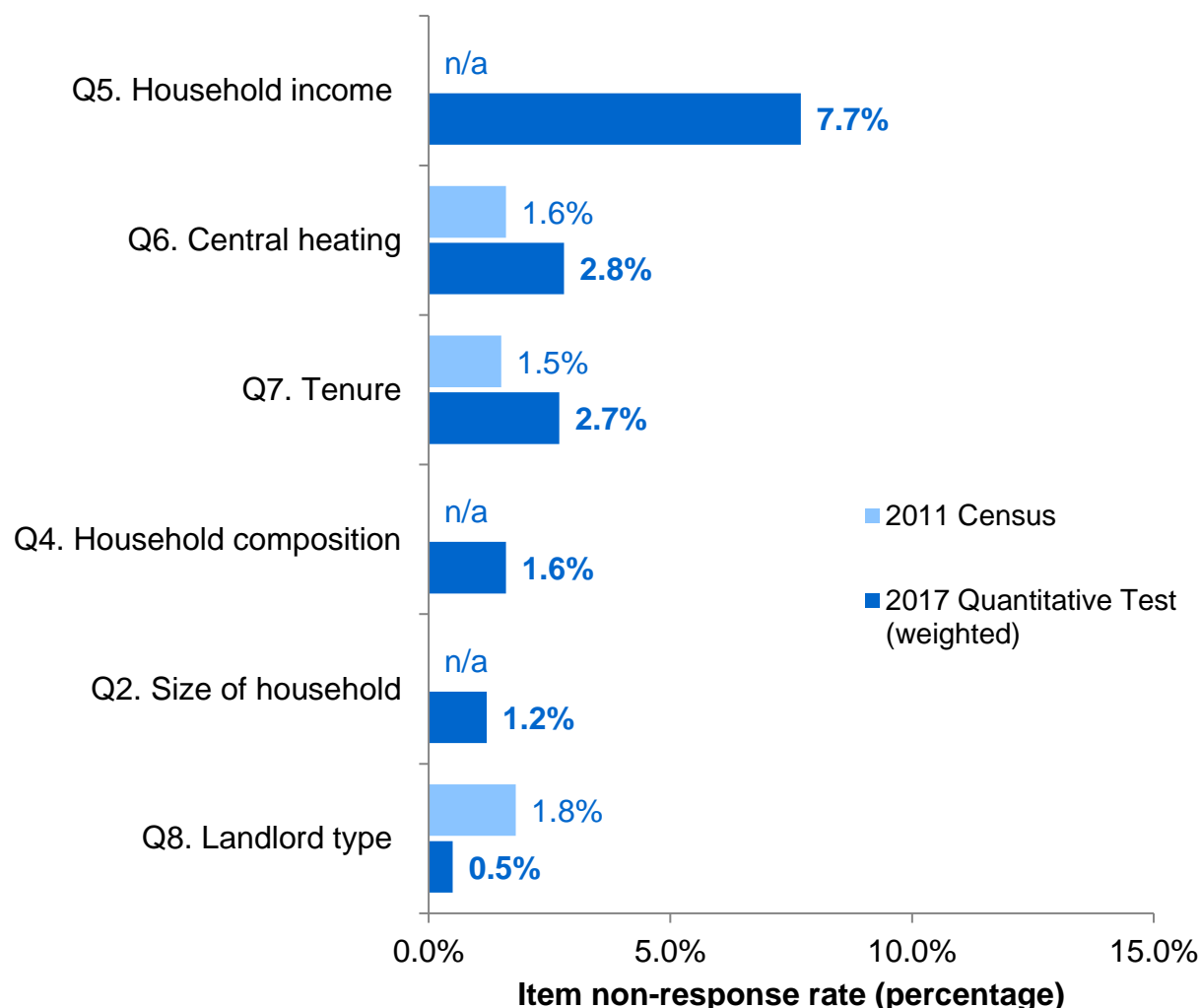
Figure 7 and Table M7 show the item non-response rates for the individual questions in the 2017 Quantitative Test and the item non-response for census questions in the 2011 Census. High item non-response rates were recorded for the questions about health conditions, Gaelic language skills, Scots language skills, and for work and study address (11.2%, 11.1%, 9.1% and 11.3% respectively). Questions about method of transport, age, non-binary sex, marital status and country of birth achieved lower item non-response rates of 1.1%, 2.3%, 2.6%, 2.9% and 3.0% respectively.

For most questions item non-response from the 2017 Quantitative Test was similar to the 2011 Census item non-response rate. Notable decrease in non-response rate was recorded for the question about health conditions (11% in the 2017 Quantitative Test compared to 15% in the 2011 Census).

Further discussion of response rates for individual questions will be included in topic reports and published on our Question Development pages.

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[5] n/a indicates that an equivalent or similar question was not included in the comparator source

Figure 7: Item non-response rate to questions in the individual section of the questionnaire (weighted) versus 2011 Census item non-response[6]

- Q15. Health conditions — 2011 Census: 15.2%; 2017 Quantitative Test (weighted): 11.2%
- Q19a. Scottish Gaelic skills — 2011 Census: n/a; 2017 Quantitative Test (weighted): 11.1%
- Q19b. Scots language skills — 2011 Census: n/a; 2017 Quantitative Test (weighted): 9.1%
- Q26. Work or study address — 2011 Census: 8.5%; 2017 Quantitative Test (weighted): 11.3%
- Q28. Qualifications — 2011 Census: 6.5%; 2017 Quantitative Test (weighted): 6.9%
- Q13. Sexual orientation — 2011 Census: n/a; 2017 Quantitative Test (weighted): 6.8%
- Q24. Religion — 2011 Census: 7.0%; 2017 Quantitative Test (weighted): 6.1%
- Q27. Method of transport — 2011 Census: 2.2%; 2017 Quantitative Test (weighted): 5.9%
- Q18a. Understand English — 2011 Census: n/a; 2017 Quantitative Test (weighted): 3.5%
- Q18b. Speak English — 2011 Census: n/a; 2017 Quantitative Test (weighted): 5.7%
- Q18c. Read English — 2011 Census: n/a; 2017 Quantitative Test (weighted): 5.6%
- Q18d. Write English — 2011 Census: n/a; 2017 Quantitative Test (weighted): 5.6%
- Q11. Trans status — 2011 Census: n/a; 2017 Quantitative Test (weighted): 4.8%
- Q20. British Sign Language — 2011 Census: 0.0%; 2017 Quantitative Test (weighted): 4.1%
- Q14. Student status — 2011 Census: 5.5%; 2017 Quantitative Test (weighted): 4.1%
- Q23. Ethnic group — 2011 Census: n/a; 2017 Quantitative Test (weighted): 3.9%
- Q25. Armed forces service — 2011 Census: 0.0%; 2017 Quantitative Test (weighted): 3.8%
- Q21. Main language — 2011 Census: 3.9%; 2017 Quantitative Test (weighted): 3.6%
- Q22. National Identity — 2011 Census: 1.6%; 2017 Quantitative Test (weighted): 3.3%
- Q17. Passports held — 2011 Census: n/a; 2017 Quantitative Test (weighted): 3.3%
- Q16. Country of birth — 2011 Census: 2.0%; 2017 Quantitative Test (weighted): 3.0%
- Q12. Marital status — 2011 Census: 2.3%; 2017 Quantitative Test (weighted): 2.9%
- Q10. Non-binary sex — 2011 Census: 0.8%; 2017 Quantitative Test (weighted): 2.6%
- Q9. Age — 2011 Census: 0.7%; 2017 Quantitative Test (weighted): 2.3%

Legend: 2011 Census; 2017 Quantitative Test (weighted)

X-axis: Item non-response rate (percentage), 0.0% to 20.0%

[6] n/a indicates that an equivalent or similar question was not included in the comparator source

4.4   Online device type analysis

Participants had the choice to complete the 2017 Quantitative Test questionnaire either online or on paper. The un-weighted estimate is that 44% chose online completion.

Table 3 shows device type used by online participants. Almost 50% of respondents opted to complete the questionnaire on a computer (including a laptop device). Around 27% used a tablet device and a further 20% used a mobile device.

If tablets and mobile phones are considered together as mobile devices (i.e. more transportable) then the proportions choosing to complete the questionnaire on a computer versus a mobile device are equal (47% and 46%, respectively).

Table 3: Response by device type (un-weighted)

Device type		
	number	**%**
Computer	301	47
Mobile Phone	120	19
Tablet	177	27
TV Device	47	7
Total	**645**	**100**

Table 4 shows that there was almost no difference in the amount of females and males responding to the questionnaire using a desktop computer. More females than males responded to the questionnaire both on a mobile phone (72 and 44, respectively) or a tablet (100 and 71 respectively). More males than females, however, responded via TV device - with 25 cases out of 42 responses from this device type being attributable to males, and 16 females.

Table 4: Device type by sex (un-weighted counts)

	Computer	**Mobile phone**	**Tablet**	**TV Device**	**Total**
Female	143	72	100	16	331
Male	142	44	71	25	282
Other tick and text	0	0	0	1	1
Total	**285**	**116**	**171**	**42**	**614**

Whilst device type appeared to vary by age, findings in Table 5 below show that proportions were largely in line with the proportions of each age group in the sample.

Table 5: Device type by age (un-weighted counts)

	Computer	Mobile phone	Tablet	TV Device	Total
16-34	49	21	11	4	85
35-54	100	48	45	14	207
55+	137	47	115	24	323
Total	**286**	**116**	**171**	**42**	**615**

More detailed analysis of device types used can be found in the Annex L.

5.   Further information

NRS intend to publish more detailed testing results on possible census questions as part of in depth topic reports. These topic reports will be published on our Question Development pages.

6.   Next steps

NRS are continuing to engage with stakeholders in planning for Scotland's Census 2021.

More information and details about upcoming events can be found on the Scotland's Census website, by subscribing to the Scotland's Census newsletter and following us on Twitter @NatRecordsScot.

Annex A: 2017 Cognitive Testing - strand one - respondent selection

In total, 26 interviews were conducted in Edinburgh, Glasgow, and Perth and one telephone interview with a participant living in Aberdeen. This included 12 participants from LGBTI groups.

In order to recruit transgender and non-binary participants, the Scottish Trans Alliance shared recruitment information through their social media sites. Through the internet, a "snowball sampling" method was used to invite participants to take part in the interviews.

In this snowball sampling method, respondents are invited to introduce further potential respondents who fit the relevant criteria and may be willing to take part in the study – with the anticipated result that the original sample will "snowball" into a larger one. This technique is regularly used to recruit hard-to-reach populations.

To recruit other participants from the general population, a recruitment agency was used. For the purpose of this testing, this sample will be referred to as the "general population" sample. Strand one included 14 participants from this general population sample.

Participants were recruited to ensure diversity in terms of their sex, age, highest education, income, and household composition; tables A1 and A2 show the composition of those interviewed.

Table A1: Sample composition achieved for Strand One: LGBTI

Characteristics	Number
LGBTI	
Transgender	7
Non-binary	5
Age	
18-34	6
35-64	5
65+	1
Highest qualification	
Further or higher education (degree, masters, PhD, professional quals, SVQ level 5)	8
Upper secondary school qualification (e.g. Highers, A-Levels)	3
Lower secondary school qualification (e.g. Standard Grade, Intermediate 2s, O grades, GSCE, National 4/5) or below/none	1
Income	
A (Annually: £0-£21,599)	8
B (Annually: £21,600-£33,599)	3
C (Annually: £33,600+)	1
Household composition	
Single adult (only respondent living in household)	6
Multiple adults with shared finances (respondent is living with a spouse or partner)	1
Multiple adults with separate finances (such as adults living with their parents, adult sharers, student sharers etc.)	5
TOTAL	**12**

Table A2. Sample composition achieved for Strand One: General population

Characteristics	Number
Sex	
Male	6
Female	8
Age	
18-34	6
35-64	6
65+	2
Highest qualification	
Further or higher education (degree, masters, PhD, professional quals, SVQ level 5)	7
Upper secondary school qualification (e.g. Highers, A-Levels)	4
Lower secondary school qualification (e.g. Standard Grade, Intermediate 2s, O grades, GSCE, National 4/5) or below/none	3
Income	
A (Annually: £0-£21,599)	6
B (Annually: £21,600-£33,599)	3
C (Annually: £33,600+)	5
Household composition	
Single adult (only respondent living in household)	5
Multiple adults with shared finances (respondent is living with a spouse or partner)	7
Multiple adults with separate finances (such as adults living with their parents, adult sharers, student sharers etc.)	2
TOTAL	**14**

Annex B: 2017 Cognitive Testing - Strand Two - Respondent Selection

In Strand Two, 32 interviews were conducted in Edinburgh and Glasgow. Due to the content of the questions, participants were recruited to ensure diversity in terms of their: sex, age, highest qualification, religion, ethnic group, computer skills, tenure, armed forces status, whether participants held a UK passport, have any health conditions, and speak English at home.

To ensure the target quota was met for strand two testing, several recruitment strategies were adopted.

To recruit participants who had health conditions we received help from Alliance Scotland, a national third sector intermediary for a range of health and social care organisations, who posted an advertisement on their Twitter account and in their newsletter to ask for participants with health conditions or carers of people with health conditions.

To recruit participants who were currently serving in the Armed Forces or were ex-service personnel, we received help with recruitment from Poppy Scotland, a Scottish charity for ex-service personnel of the British Armed Forces and their dependants.

To recruit other participants from the general population, a recruitment agency was used to invite participants to take part in an interview.

Tables B1 and B2 show the composition of those interviewed.

Table B1: Sample composition achieved for Strand Two testing – part 1

Characteristics	Number
Sex	
Male	17
Female	15
Age	
18-34	5
35-64	22
65+	5
Highest qualification	
Further or higher education (degree, masters, PhD, professional quals, SVQ level 5)	21
Upper secondary school qualification (e.g. Highers, A-Levels)	6
Lower secondary school qualification (e.g. Standard Grade, Intermediate 2s, O grades, GSCE, National 4/5) or below/none	5
Religion	
None	14
Church of Scotland	6
Roman Catholic	1
Other Christian	4
Muslim	1
Buddhist	1
Sikh	2
Hindu	1
Other	2

Table B2: Sample composition achieved for Strand Two testing – part 2

Characteristics	Number
Ethnic Group	
White	25
Asian, Asian Scottish or Asian British	5
African	1
Other ethnic group	1
Passports held	
United Kingdom	24
Ireland	1
Other	5
None	2
Use language other than English at home	
No, English only	26
Yes, British sign language	-
Other	6
Computer Skills	
Has difficulty managing basic computer tasks/cannot manage basic computer tasks	-
Can manage basic computer tasks such as browsing the internet and word processing	10
Can manage more complex computer tasks	22
Tenure	
Owns with a mortgage or loan	11
Own outright	7
Own with shared equity	
Rent (with or without housing benefit)	12
Part own and part rent (shared ownership)	1
Live here rent free	1
Health Condition	
No health condition	12
Yes, has a health condition	20
Currently serving/Ex-service personnel	
Ex-service	7
Currently serving	3
Never served	22
TOTAL INTERVIEWED	**32**

Annex C: 2017 Test Questionnaire

Scotland's Census
Shaping our future

Help inform the next census

National Records of Scotland is responsible for carrying out the 10-yearly census of population and housing in Scotland. It is vital for the planning and funding of services in your community.

Planning for the next census, which will take place in 2021, is already underway. We need to make sure that we get the right information for everyone in Scotland. By filling out this questionnaire you will be helping us to ask the right questions.

ScotCen are carrying out a short survey on our behalf to test some questions that may be included in the next census. By taking part in this survey you will help shape the next census.

Further information is available at www.scotlandscensus.gov.uk/consultation-2021

All the answers you provide will be entirely confidential.

How to fill in this questionnaire

The survey takes around 5–10 minutes to complete. Please answer all questions, unless the instructions ask you to skip a question. For most questions you will be asked to tick the box next to the statement which best applies to you.

Please:

- use black or blue ink

- tick your answers **within** the box like this: ☑

- print your answers, in English, within the boxes like this: S M I T H

- use capital letters — one per box

- correct any mistakes like this: ■ or S M ■ I T H

- if a word will not fit on one line, continue on to the next line like this, if possible:

  1 3 0   L A D Y W E L L   C R E S C
  E N T

If you prefer, you can complete this survey online at www.survey.natcen.ac.uk/census
You will be asked to enter the **unique access code** that can be found on the letter that came with this survey.

Please return the survey using the pre-paid envelope provided, or to:

NatCen Social Research,
103–105 Kings Road, Brentwood,
Essex, CM14 4LX

If you have any questions please call the FREEPHONE survey helpline on 0808 168 1356. The helpline is open Monday to Friday – 9am to 5pm, or email scotlandscensus@scotcen.org.uk

P12380   <Serial1><Ckl>

Frequently asked questions

Q Who is carrying out this research?

A ScotCen is carrying out the survey on behalf of National Records of Scotland (NRS). ScotCen is an independent research agency. You can find out more information at www.scotcen.org.uk/census. NRS is responsible for the census in Scotland and you can find out more at www.scotlandscensus.gov.uk/consultation-2021.

Q How did we get your address?

A Your household has been selected at random from the Royal Mail's publicly available list of residential addresses in Scotland. It is important to have a random selection, so that the results reflect the experiences and views of the whole population.

Q Who should fill out the questionnaire in my household?

A We would like to hear from people in your household aged 16 or over. Up to four people in your household can take part.

Q Why are we carrying out this research?

A The census is used to plan everything from the health service and schools, to our roads and railways. Planning for Scotland's Census 2021 is well underway and we're testing questions to make sure the 2021 Census questionnaire is as easy as possible to complete. This is your chance to help get things right.

Q Is the survey confidential?

A Yes, the answers you give in the survey are protected by law (Data Protection Act 1998). We won't share your answers with anyone outside ScotCen or NRS.

Q What will happen to any information I give?

A The information you provide will be treated confidentially and used only for statistical purposes. Your name and address details will be stored securely and will be kept separate from your answers. ScotCen will not pass on your personal details to anybody without your permission, and will delete them on completion of the study unless you specifically agree otherwise.

Q How will my answers be used?

A All the responses to the survey will be combined to provide information which will help NRS make decisions on the questions in the 2021 Census. Your answers will remain confidential. If you would prefer not to answer particular questions please leave them blank but do complete the rest of the questionnaire. Taking part is voluntary but we do hope you will help.

Section A: About your household

This section of the questionnaire contains questions about your household.

A **household** is:
- one person living alone; or
- a group of people (not necessarily related) living at the same address who share cooking facilities and share a living room or sitting room or dining area.

1 If you live in a communal establishment (for example student halls of residence), please tick this box ☐ → Go to **9**

Otherwise, → Go to **2**

2 How many people usually live in your household?
- ♦ Please include yourself and all other adults and children

☐☐

3 Of these, how many are dependent children?
- ♦ Please include all people who are:
  - aged 0 – 15
  - aged 16 – 18 and in full-time education

☐☐

4 Which of the following best describes your household?
- ♦ Tick one box only

☐ Single person household
☐ Lone parent household with children
☐ Couple household without children
☐ Couple household with children
☐ Other – without children
☐ Other – with children

5 What is your total household income from all sources over the last 12 months?
- ♦ Count income from every person included in the household
- ♦ Do not deduct taxes, National Insurance contributions, health insurance payments, pension contributions

	Per week	Per year
☐	Less than £100	Less than £5,200
☐	£100 to £199	£5,200 to £10,399
☐	£200 to £299	£10,400 to £15,599
☐	£300 to £399	£15,600 to £20,799
☐	£400 to £499	£20,800 to £25,999
☐	£500 to £699	£26,000 to £36,399
☐	£700 to £999	£36,400 to £51,999
☐	£1,000 to £1,499	£52,000 to £77,999
☐	£1,500 or more	£78,000 or more

6 What type of central heating does this accommodation have?
- ♦ Central heating is a central system that generates heat for multiple rooms
- ♦ If the central heating is available please tick the box, whether or not you use it

☐ No central heating
☐ Mains gas
☐ Other gas (including liquid petroleum gas and biogas)
☐ Electric (including storage heating)
☐ Oil
☐ Wood or biomass (logs, pellets, chippings)
☐ Other solid fuel (coal, coke)
☐ Other renewable energy source (including electric and air heat pump systems)
☐ Other

7 Does your household own or rent this accommodation?
- ♦ Tick one box only

☐ Owns with a mortgage or loan → Go to **9**
☐ Owns outright → Go to **9**
☐ Owns with shared equity (for example LIFT, Help-to-Buy) → Go to **9**
☐ Rents (with or without housing benefit)
☐ Part owns and part rents (shared ownership) → Go to **9**
☐ Lives here rent free → Go to **9**

8 Who is your landlord?
☐ Council (Local Authority) or Housing Association / Registered Social Landlord
☐ Private landlord or letting agency
☐ Other

Section B: About you

This section of the questionnaire contains questions about you as an individual.

9 What is your age?

- ☐ 16 – 24 years
- ☐ 25 – 34 years
- ☐ 35 – 44 years
- ☐ 45 – 54 years
- ☐ 55 – 64 years
- ☐ 65 – 74 years
- ☐ 75+ years

10 What is your sex?

♦ Tick one box only

- ☐ Female
- ☐ Male
- ☐ Other, please write in

[ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ]

11 Do you consider yourself to be trans, or have a trans history?

♦ Tick one box only

☐ Yes ☐ No ☐ Prefer not to say

12 What is your legal marital or same-sex civil partnership status?

- ☐ Never married and never registered in a same-sex civil partnership
- ☐ Married
- ☐ Separated, but still legally married
- ☐ Divorced
- ☐ Widowed
- ☐ In a registered same-sex civil partnership
- ☐ Separated, but still legally in a same-sex civil partnership
- ☐ Formerly in a same-sex civil partnership which is now legally dissolved
- ☐ Surviving partner from a same-sex civil partnership

13 Which of the following options describes how you think of yourself?

♦ This question is voluntary
♦ Tick one box only

- ☐ Heterosexual or Straight
- ☐ Gay or Lesbian
- ☐ Bisexual
- ☐ In another way, please write in

[ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ]

14 Are you a student in full-time education?

- ☐ Yes
- ☐ No

15 Do you have any of the following, which have lasted, or are expected to last, at least 12 months?

♦ Tick all that apply

- ☐ **Deafness or partial hearing loss**
- ☐ **Blindness or partial sight loss**
- ☐ **Learning disability** (a condition that you have had since childhood that affects the way you learn, understand information and communicate)
- ☐ **Learning difficulty** (a specific learning condition that affects the way you learn and process information)
- ☐ **Developmental disorder** (a condition that you have had since childhood which affects motor, cognitive, social and emotional skills and speech and language)
- ☐ **Physical disability** (a condition that substantially limits one or more basic physical activities such as walking, climbing stairs, lifting or carrying)
- ☐ **Mental health condition** (a condition that affects your emotional, physical and mental wellbeing)
- ☐ **Long-term illness, disease or condition** (a condition that you will have for life which may be managed with treatment or medication)
- ☐ **Other condition**, please write in

[ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ]
[ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ]

- ☐ **No condition**

16 What is your country of birth?

- ☐ Scotland
- ☐ England
- ☐ Northern Ireland
- ☐ Wales
- ☐ Republic of Ireland
- ☐ Elsewhere, please write in the current name of the country

[ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ]

17 What passports do you hold?

♦ Tick all that apply

☐ United Kingdom

☐ Ireland

☐ Other, please write in

[ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ]

[ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ]

☐ None

18 How well can you understand, speak, read and write English?

♦ Tick one box in each column

	Understand	Speak	Read	Write
Very well	☐	☐	☐	☐
Well	☐	☐	☐	☐
Not well	☐	☐	☐	☐
Not at all	☐	☐	☐	☐

19 Can you understand, speak, read and write Scottish Gaelic or Scots language?

♦ Tick all that apply

	No ability	Understand	Speak	Read	Write
Scottish Gaelic	☐	☐	☐	☐	☐
Scots language	☐	☐	☐	☐	☐

20 Can you use British Sign Language?

♦ Tick all that apply

☐ No ability   ☐ Understand   ☐ Sign

21 What is your main language?

☐ English

☐ Other, please write in (for British Sign Language write "BSL")

[ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ]

22 What do you feel is your national identity?

♦ Tick all that apply

☐ Scottish   ☐ English   ☐ Northern Irish

☐ Welsh   ☐ British

☐ Other, please write in

[ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ]

[ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ]

23 What is your ethnic group?

♦ Choose ONE section from A to F, then tick ONE box which best describes your ethnic group or background

A White

☐ Scottish

☐ Other British

☐ Irish

☐ Gypsy / Traveller

☐ Polish

☐ Other white ethnic group, please write in

[ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ]

B Mixed or multiple ethnic groups

☐ Any mixed or multiple ethnic groups, please write in

[ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ]

[ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ]

C Asian, Asian Scottish or Asian British

☐ Pakistani, Pakistani Scottish or Pakistani British

☐ Indian, Indian Scottish or Indian British

☐ Bangladeshi, Bangladeshi Scottish or Bangladeshi British

☐ Chinese, Chinese Scottish or Chinese British

☐ Other, please write in

[ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ]

D African

☐ African, African Scottish or African British

☐ Other, please write in

[ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ]

E Caribbean or Black

☐ Caribbean, Caribbean Scottish or Caribbean British

☐ Black, Black Scottish or Black British

☐ Other, please write in

[ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ]

F Other ethnic group

☐ Arab, Arab Scottish or Arab British

☐ Other, please write in

[ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ]

24 What religion, religious denomination or body do you belong to?

♦ This question is voluntary

☐ None
☐ Church of Scotland
☐ Roman Catholic
☐ Other Christian, please write in below
☐ Muslim
☐ Hindu
☐ Buddhist
☐ Sikh
☐ Jewish
☐ Another religion or body, please write in

☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

25 Have you ever served in the UK armed forces?

♦ Please include national service
♦ Tick all that apply

☐ No
☐ Yes – currently serving
☐ Yes – previously served, regular armed forces
☐ Yes – previously served, reserve armed forces

26 What address do you travel to for your main job or course of study (including school)?

♦ Answer for the place where you spend the most time
♦ If you report to a depot, please write in the depot address

☐ Not currently working or studying, including retired → Go to 28
☐ Work mainly at, or from, home → Go to 28
☐ Distance learning, home schooled or equivalent → Go to 28
☐ No fixed place → Go to 27
☐ Work on an offshore installation – please write where you travel offshore from, for example "ABERDEEN HARBOUR"
☐ The address below, please write in

☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐
☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐
☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

Postcode
☐☐☐☐ ☐☐☐

The address entered above is my place of
☐ Work   ☐ Study

27 How do you usually travel to your main job or course of study (including school)?

♦ Answer for your usual travel to the place where you spend the most time
♦ Tick the box for the longest part, by distance, of your usual journey to work or study
♦ Tick one box only

☐ Driving a car or van
☐ Passenger in a car or van
☐ On foot
☐ Bus, minibus or coach
☐ Train
☐ Underground, subway, metro, light rail or tram
☐ Taxi
☐ Bicycle
☐ Motorcycle, scooter or moped
☐ Other

28 Which of these qualifications do you have?

♦ Tick all that apply

☐ O Grade, Standard Grade, National 4 or 5, Access 3 Cluster, National 3, Intermediate 1 or 2, GCSE, CSE, Senior Certificate or equivalent
☐ SCE Higher Grade, Higher, Advanced Higher, CSYS, A Level, AS Level, Advanced Senior Certificate or equivalent
☐ Apprenticeship (including trade, advanced, foundation and modern)
☐ GSVQ Foundation or Intermediate, SVQ level 1 or 2, SCOTVEC Module, City and Guilds Craft or equivalent
☐ GSVQ Advanced, SVQ level 3, ONC, OND, SCOTVEC National Diploma, City and Guilds Advanced Craft or equivalent
☐ HNC, HND, SVQ level 4 or equivalent
☐ Other school qualifications not already mentioned (including foreign qualifications)
☐ Other post-school but pre-Higher Education qualifications not already mentioned (including foreign qualifications)
☐ Degree, Postgraduate qualifications, Masters, PhD, SVQ level 5 or equivalent
☐ Professional qualifications (for example teaching, nursing, accountancy)
☐ Other Higher Education qualifications not already mentioned (including foreign qualifications)
☐ No qualifications

Section C: Feedback

This section of the questionnaire asks for your feedback on the questions you have answered.

Did you find any of the following questions difficult to answer?

♦ Tick all that apply

☐ Q1. Communal establishment   ☐ Q5. Household income

☐ Q2. Number of people in household   ☐ Q6. Central heating

☐ Q3. Number of dependent children in household   ☐ Q7. Tenure

☐ Q4. Household composition   ☐ Q8. Landlord (if applicable)

For the questions you selected please tell us why:

♦ Please start your comment with the name of the question, for example "Q1. Communal establishment: ..."
♦ Please write in BLOCK CAPITALS

♦ If you would like to write more, please attach A4 paper and tick this box ☐

Did you find any of the following questions difficult to answer?

♦ Tick all that apply

☐ Q9. Age   ☐ Q13. Sexual orientation

☐ Q10. Sex   ☐ Q14. Student status

☐ Q11. Trans status   ☐ Q15. Health conditions

☐ Q12. Marital status   ☐ Q16. Country of birth

For the questions you selected please tell us why:

♦ Please start your comment with the name of the question, for example "Q9. Age: ..."
♦ Please write in BLOCK CAPITALS

♦ If you would like to write more, please attach A4 paper and tick this box ☐

Did you find any of the following questions difficult to answer?
♦ Tick all that apply

☐ Q17. Passports   ☐ Q20. British Sign Language

☐ Q18. English language skills   ☐ Q21. Main language

☐ Q19a. Scottish Gaelic language skills ☐ Q22. National identity

☐ Q19b. Scots language skills   ☐ Q23. Ethnic group

For the questions you selected please tell us why:
♦ Please start your comment with the name of the question, for example "Q17. Passports: ..."
♦ Please write in BLOCK CAPITALS

♦ If you would like to write more, please attach A4 paper and tick this box ☐

Did you find any of the following questions difficult to answer?
♦ Tick all that apply

☐ Q24. Religion   ☐ Q27. Transport to work or study (if applicable)

☐ Q25. Armed forces service   ☐ Q28. Qualifications

☐ Q26. Work or study status and address

For the questions you selected please tell us why:
♦ Please start your comment with the name of the question, for example "Q24. Religion: ..."
♦ Please write in BLOCK CAPITALS

♦ If you would like to write more, please attach A4 paper and tick this box ☐

Annex D: Fieldwork materials - Invitation Letter

Invitation Letter

Scotland's Census
Shaping our future

<Add1>
<Add2>
<Add3>
<Add4>
<Add5>
<Postcode>

Ref: P12380/<Serial1><Ckl>

Help us get ready for the next census

Dear Sir/Madam,

Your address has been selected at random to take part in a short survey, to help us prepare for Scotland's Census 2021. It will only take 5-10 minutes. The census is vital for the planning and funding of services in your community.

ScotCen are carrying out a short survey on behalf of National Records of Scotland to test some questions that may be included in the next census.

It's quick and easy to take part

Please complete the survey as soon as possible. We would like to hear from people in your household aged 16 and over. Up to four people in your household can take part. Your responses will be treated confidentially and used for statistical purposes only.

1. Go to **www.survey.natcen.ac.uk/census**

2. Enter your unique access code:

Person 1: <AccessCode1>   Person 2: <AccessCode2>

Person 3: <AccessCode3>   Person 4: <AccessCode4>

If you would prefer to complete the survey on paper you can request a copy by calling free on **0808 168 1356** or emailing us at **scotlandscensus@scotcen.org.uk**.

Thank you

The census is used to plan everything from the health service and schools, to our roads and railways, so your contribution is very important. Further information and contact details can be found on the reverse of this letter.

Yours faithfully,

Esta Clark
Head of Census Design,
National Records of Scotland

National Records of Scotland

ScotCen Social Research

Annex E: Fieldwork materials - Reminder One

Scotland's Census
Shaping our future

<Add1>
<Add2>
<Add3>
<Add4>
<Add5>
<Postcode>

Ref: P12380/<Serial1><Ckl>

Help shape Scotland's Census 2021

Dear Sir/Madam,

We wrote to you recently to let you know that we have selected your address to take part in a short survey to help us prepare for Scotland's Census 2021. This will only take 5-10 minutes.

How to take part

We would like to hear from people in your household aged 16 and over. Up to four people in your household can take part.

To complete the online questionnaire please type this link into the address bar at the top of your internet browser:

1. Go to **www.survey.natcen.ac.uk/census**

2. Enter your unique access code:

Person 1: <AccessCode1>   Person 2: <AccessCode2>

Person 3: <AccessCode3>   Person 4: <AccessCode4>

Pass this letter on to others in your household.

Please complete the survey as soon as possible. The responses you provide will be treated confidentially.

If you would prefer to complete the survey on paper you can request a copy by calling free on **0808 168 1356** or emailing us at scotlandscensus@scotcen.org.uk.

Yours faithfully,

Esta Clark
Head of Census Design,
National Records of Scotland

National Records of Scotland

ScotCen Social Research

Annex F: Fieldwork materials - Reminder Two

Scotland's Census
Shaping our future

<Add1>
<Add2>
<Add3>
<Add4>
<Add5>
<Postcode>

Ref: P12380/<Serial1><Ckl>

Help us ask the right questions

Dear Sir/Madam,

We wrote to you recently to let you know that we have selected your address to take part in a short survey to help us prepare for Scotland's Census 2021. This will only take 5-10 minutes. We wanted to let you know that you can also take part via post.

Its quick and easy to take part

We would like to hear from people in your household aged 16 and over. Up to four people in your household can take part. To take part:

1. Fill out your details in one of the enclosed questionnaires.

2. Pass this letter and the spare questionnaire on to someone else in your household.

3. Post back your questionnaires to us for free in the envelope provided.

4. Request more paper questionnaires if you need them.

If you would prefer to complete the survey online log on to www.survey.natcen.ac.uk/census, enter a unique log-in (Person 1: <AccessCode1> Person 2: <AccessCode2> Person 3: <AccessCode3> Person 4: < AccessCode4>) and complete the survey.

Yours faithfully,

Esta Clark
Head of Census Design,
National Records of Scotland

National Records of Scotland

ScotCen Social Research

Annex G: Fieldwork materials - Reminder Three

Scotland's Census
Shaping our future

<Add1>
<Add2>
<Add3>
<Add4>
<Add5>
<Postcode>

Ref: P12380/<Serial1><Ckl>

You can still take part

Dear Sir/Madam,

We wrote to you recently to let you know that we have selected your address to take part in a short survey to help us prepare for Scotland's Census 2021. Our records show that your household has not yet completed a questionnaire. There's still time for you to have your say and help shape the next census.

Take part online or by post

We would like to hear from people in your household aged 16 and over. Up to four people in your household can take part.

1. Go to www.survey.natcen.ac.uk/census

2. Enter your unique access code:

Person 1: <AccessCode1>   Person 2: <AccessCode2>

Person 3: <AccessCode3>   Person 4: <AccessCode4>

3. Fill out your details.

4. Pass this letter on to others in your household.

If you would prefer to complete the survey on paper you can request a copy by calling free on **0808 168 1356** or emailing us at **scotlandscensus@scotcen.org.uk**.

The responses you provide will be treated confidentially.

Yours faithfully,

Esta Clark
Head of Census Design,
National Records of Scotland

National Records of Scotland

ScotCen Social Research

Annex H: Fieldwork materials - Reminder Three part B

Scotland's Census
Shaping our future

\<Add1\>
\<Add2\>
\<Add3\>
\<Add4\>
\<Add5\>
\<Postcode\>

Ref: P12380/\<Serial1\>\<Ckl\>

We would like to hear from any other adults in your household

Dear Sir/Madam,

Many thanks. We wrote to you a few weeks ago to ask your household to take part in a short survey to help us prepare for Scotland's Census 2021. At least one adult in your household has very kindly taken part already. We really need the any other remaining adults in your household to take part too. It will only take 5-10 minutes. We hope we can count on your help.

The census is vital for the planning and funding of services in your community. ScotCen are carrying out a short survey on behalf of National Records of Scotland to test some questions that may be included in the next census.

Take part online or by post

Please can any other adults in your household complete the survey as soon as possible. We would like to hear from all those in your household, aged 16 and over, who have not yet completed the survey. Please remember to use a different access code to the one already used by the person in your household who took part. All responses will be treated confidentially and used for statistical purposes only.

1. Go to **www.survey.natcen.ac.uk/census**

2. Enter your unique access code:

Person 1: \<AccessCode1\>   Person 2: \<AccessCode2\>

Person 3: \<AccessCode3\>   Person 4: \<AccessCode4\>

We also enclose a paper questionnaire, if someone would prefer to complete the survey this way and return it to us by post.

Thank you

The census is used to plan everything from the health service and schools, to our roads and railways, so your contribution is very important. Further information and contact details can be found on the reverse of this letter.

Yours faithfully,

Esta Clark
Head of Census Design,
National Records of Scotland

National Records of Scotland

ScotCen Social Research

Annex I: Reverse of all letters

Frequently asked questions

Who is carrying out this research?

ScotCen is carrying out the survey on behalf of National Records of Scotland (NRS). ScotCen is an independent research agency. You can find out more information at **www.scotcen.org.uk/census**. NRS is responsible for the census in Scotland and you can find out more at **www.scotlandscensus.gov.uk/consultation-2021**.

How did we get your address?

Your household has been selected at random from the Royal Mail's publicly available list of residential addresses in Scotland. It is important to have a random selection, so that the results reflect the experiences and views of the whole population.

Who should fill out the questionnaire in my household?

We would like to hear from people in your household aged 16 and over. Up to four people in your household can take part.

Why are we carrying out this research?

The census is used to plan everything from the health service and schools, to our roads and railways. Planning for Scotland's Census 2021 is well under way and we're testing questions to make sure the 2021 Census questionnaire is as easy as possible to complete. This is your chance to help get things right.

Is the survey confidential?

Yes, the answers you give in the survey are protected by law (Data Protection Act 1998). We won't share your answers with anyone outside ScotCen or NRS.

What will happen to any information I give?

The information you provide will be treated confidentially and used only for statistical purposes. Your name and address details will be stored securely and will be kept separate from your answers. ScotCen will not pass your personal details to anybody without your permission, and will delete them on completion of the study unless you specifically agree otherwise.

How will my answers be used?

All the responses to the survey will be combined to provide information which will help NRS make decisions on the questions in the 2021 Census. Your answers will remain confidential. If you would prefer not to answer particular questions please leave them blank but do complete the rest of the questionnaire. Taking part is voluntary but we do hope you will help.

Any further questions?

If you have any further questions, please visit **www.scotcen.org.uk/census**, email **scotlandscensus@scotcen.org.uk** or call free on **0808 168 1356**.

Annex J: Fieldwork Schedule

Table J1: Fieldwork dates for 2017 Quantitative Test

Invitation letters sent	Wed 15th Nov
Fieldwork starts	Wed 15th Nov
Reminder 1	Wed 22nd Nov
Reminder 2	Wed 29th Nov
Reminder 3	Wed 6th Dec
Reminder 3b	Wed 6th Dec
Fieldwork closes	Tues 2nd Jan

Annex K: Weighting

The achieved sample was weighted to adjust for:

- Differences in address/household response rates; and

- Differences in individual response rates.

1. Differences in address/household response rates

The sample frame included multiple household addresses. These addresses were identified in the sampling frame (Postcode Address File – PAF) using the Multiple Occupancy Indicator (MOI). The MOI has a value of one for single-household addresses and a value of greater than one for multiple-household addresses. Addresses with an MOI greater than one were included in the sampling frame as many times as indicated by the MOI, therefore all households had an equal chance of selection[7].

In a face-to-face survey, the MOI of the addresses would have been checked by the interviewer but this was not possible in this case. Instead, NRS matched a "multiple-residency" flag to each address in the issued sample based on the 2011 Census population. Fifteen addresses (from a total of 3295 in the issued sample[8]) were flagged as containing multiple residencies and seven of them had MOI=1 in the PAF. These seven addresses were assigned a weight (wt1) of two[9] on the assumption that they have remained multiple-household addresses (and the MOI was incorrect).

The weights to adjust for differences in address/household response rates were calculated in three steps:

Step 1: address/household participation

The aim of the address/household participation weighting is to reduce bias caused by systematic differences between responding and non-responding households.

The method used for adjusting for non-response was propensity modelling. A logistic regression model was created to predict the likelihood of response versus non-response. From this model, the probability to participate was estimated for each address/household using following variables:

- 6-fold urban/rural indicator, and

- Scottish Index of Multiple Deprivation (SIMD) quintile and region.

The weights for address/household participation (wt2) were calculated as an inverse to the probability to participate (weight = 1/ probability) for the 1,087 responding addresses/households.

The model for address/household participation is shown in Table K1.

Step 2: dealing with likely duplicate responses

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[7] At addresses with an MOI>1, the household member who opened the survey invitation letter would self-select their own household (rather than selecting one household at random).

[8] The total issued sample was 3300 addresses but 5 were identified as communal establishments and therefore excluded as not eligible for the survey.

[9] Ideally, wt1 should have been calculated to be equal to the number of households at the address, however this information was not available.

Respondents in seven households were classified as "likely duplicates" during the data validation stage. Increased probability of selection of such households was compensated by assigning a weight. These households received a weight (wt3) equal to the number of adults in each household divided by the number of surveys received (wt3 was equal to 1 for all other households).

Step 3: expected number of completed surveys

This stage of the weighting aimed to reduce bias caused by systematic differences in the number of completed surveys returned by responding households. The expected number of completed surveys at responding addresses was estimated via a logistic regression model[10].

From this model, the expected number of completed surveys was estimated as one plus the model-predicted probability. The following variables were identified as significant in predicting the number of completed surveys returned:

- SIMD quintile,

- household size,

- the interaction between the urban/rural indicator and mode of data collection, and

- the interaction between mode of data collection and receiving a paper questionnaire in the reminders.

The weight (wt4) was calculated as the inverse of this expected number.The model for the expected number of completed surveys is shown in Table K2.

2. Differences in individual response rates

The combined weight for address/household level participation (wt5) was calculated as the product of the weights from the previous stages (wt5 = wt1 x wt2 x wt3 x wt4).

The final stage of the weighting aims to reduce any residual non-response bias at the individual level using calibration (post-stratification).

The combined (household-level) weight from the previous stages (wt5) was adjusted so that the weighted achieved sample (weighted by the final weight) matched the 2017 Mid-Year Population Estimates of household residents by age and sex (see Table K3). The adjustment (wt6) was calculated for each age-by-sex category[11] as the ratio of the number of people aged 16 or over in the population divided by the sum of wt5[12].

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[10] Weighted by the product of: wt1 x wt2 x wt3.

[11] Because of the very small number of men (17) and women (21) aged 16-24 in the achieved sample, the 16-24 and 25-34 age categories (for men and women) were grouped together prior to calibration to avoid a small number of very high weights which would inflate the standard errors, reduce the precision of the survey estimates and cause the weighted sample to be less efficient.

[12] 3 cases with missing age were assigned the mean wt6 within gender; 9 cases with missing gender were assigned the mean wt6 within age group; 32 cases with missing age and gender were assigned the overall mean wt6.

The final weight (final_wt) was calculated as the product of wt5 and wt6[13] and scaled so that the weighted and unweighted sample sizes are the same (1,454 cases).

Table K1: Logistic regression model for address/household participation

Variable	odds	p	CI
Urban/rural		<0.001	
Large Urban Areas	1.00	-	-
Other Urban Areas	1.09	0.356	(0.91,1.32)
Accessible Small Towns	1.55	0.002	(1.18,2.05)
Remote Small Towns	1.13	0.593	(0.73,1.75)
Accessible Rural	1.70	<0.001	(1.31,2.21)
Remote Rural	1.25	0.253	(0.85,1.82)
IMD quintile		<0.001	
1st (lowest)	1.00	-	-
2nd	1.38	0.010	(1.08,1.76)
3rd	1.41	0.007	(1.10,1.81)
4th	1.49	0.002	(1.16,1.92)
5th (highest)	2.10	<0.001	(1.64,2.68)
Region		0.011	
Glasgow and Lanarkshire	1.00	-	-
Ayrshire, Dumfries and Galloway, Borders	0.07	0.071	(0.98,1.69)
Lothian and Central	0.00	0.001	(1.15,1.76)
Fife, Dundee and Grampian	0.40	0.403	(0.88,1.37)
Rest of Scotland (south of the Caledonian Canal)	0.01	0.006	(1.11,1.89)
North of the Caledonian Canal	0.36	0.361	(0.78,2.00)
Intercept	0.24	-	-

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[13] The largest 3 weights were trimmed to the value of the next highest value to avoid excess inflation of the weights which would cause the weighted sample to be less efficient.

Table K2: Logistic regression model for expected number of completed surveys in responding households

Variable	odds	p	CI
IMD quintile		0.003	
1st (lowest)	1.00	-	-
2nd	1.10	0.680	(0.70,1.71)
3rd	1.58	0.039	(1.02,2.44)
4th	1.87	0.005	(1.20,2.89)
5th (highest)	2.06	0.001	(1.33,3.19)
Household size		<0.001	
1 or 2	1.00	-	-
3	2.35	<0.001	(1.55,3.56)
4+	2.21	<0.001	(1.45,3.36)
Urban/rural by mode		0.008	
urban / paper (or mixed)	1.00	-	-
urban / web-only	1.00	-	-
rural / paper (or mixed)	1.00	-	-
rural / web-only	2.02	0.008	(1.20,3.40)
Mode by reminder		<0.001	
Paper (or mixed) / no paper q'naire in reminder	1.00	-	-
Paper (or mixed) / paper q'naire in reminder	1.00	-	-
Web-only / no paper q'naire in reminder	1.00	-	-
Web-only / paper q'naire in reminder	0.32	<0.001	(0.22,0.45)
Intercept	0.31	-	-

Table K3: Calibration weighting

	Unweighted		Before calibration		After calibration		Final weights		Population	
	n	%	n	%	n	%	n	%	n	%
Gender										
Male	640	45.3	629	44.5	679	48.2	678	48.1	2,159,107	48.1
Female	773	54.7	783	55.5	731	51.8	732	51.9	2,329,676	51.9
Age group										
16-24	*39*	*2.7*	*37*	*2.6*	*99*	*7.0*	*99*	*7.0*	*607,188*	*13.5*
25-34	*109*	*7.7*	*120*	*8.5*	*324*	*22.9*	*322*	*22.7*	*726,037*	*16.2*
16-34	148	10.4	158	11.1	423	29.9	422	29.7	1,333,225	29.7
35-44	159	11.2	155	10.9	210	14.8	210	14.8	665,391	14.8
45-54	219	15.4	219	15.4	252	17.7	252	17.8	798,942	17.8
55-64	329	23.2	323	22.8	218	15.4	218	15.4	692,373	15.4
65-74	351	24.7	356	25.1	176	12.4	176	12.4	556,543	12.4
75+	213	15.0	207	14.6	139	9.8	139	9.8	442,309	9.9
Age-by-gender										
Male 16-34	61	4.3	62	4.4	208	14.8	206	14.7	664,560	14.8
Male 35-44	71	5.0	66	4.7	102	7.3	102	7.3	326,197	7.3
Male 45-54	98	7.0	94	6.7	121	8.6	121	8.6	386,851	8.6
Male 55-64	156	11.1	155	11.0	106	7.5	106	7.5	337,143	7.5
Male 65-74	170	12.1	169	12.0	83	5.9	83	5.9	265,336	5.9
Male 75+	82	5.8	80	5.7	56	4.0	56	4.0	179,020	4.0
Female 16-34	85	6.0	94	6.7	210	14.9	210	14.9	668,665	14.9
Female 35-44	87	6.2	88	6.2	106	7.6	106	7.6	339,194	7.6
Female 45-54	120	8.5	124	8.8	129	9.2	129	9.2	412,091	9.2
Female 55-64	172	12.2	167	11.8	111	7.9	112	7.9	355,230	7.9
Female 65-74	178	12.6	183	13.0	91	6.5	91	6.5	291,207	6.5
Female 75+	130	9.2	126	9.0	83	5.9	83	5.9	263,289	5.9
Total			1,454*						4,488,783	

* includes cases with missing age and/or gender

Annex L: Online device type analysis

Device type by Scottish Index of Multiple Deprivation

Table L1 shows that around one third (97 cases) of online responses from a computer came from participants who were living in the least deprived areas. Responses from computers decreased, as area deprivation increased. The same pattern was true for responses on tablet devices. The pattern between SIMD and response on mobile phone or TV device was much less clear. Whilst there was some difference between area deprivation and the number of responses for each device, the pattern was not linear.

Table L1: Device type by Scottish Index of Multiple Deprivation (unweighted counts)

	Computer	Mobile phone	Tablet	TV Device	Total
1 Most	37	23	12	8	80
2	28	25	40	3	96
3	67	14	36	14	131
4	72	29	40	9	150
5 Least	97	29	49	13	188
Total	**301**	**120**	**177**	**47**	**645**

Device type by outcome

Table L2 shows that across all device types the fully completed rate was 90% or above. Mobile phone devices had the highest rate of full completions (97%) and TV devices the lowest (91%).

Table L2: Device type by outcome (unweighted)

	Fully completed		Partially completed	
	n	%	n	%
Computer	283	94	18	7
Mobile Phone	116	97	4	3
Tablet	169	95	8	6
TV Device	43	91	4	10
Total	**611**	**100**	**34**	**100**

Annex M: Tables

Table M1: Response rate by self-identified sex for 2017 Quantitative Test (weighted and unweighted) and Mid-2017 population estimates

	2017 Quantitative Test (Unweighted)		2017 Quantitative Test (Weighted)		Mid-2017 population estimates
Sex	**n**	**%**	**n**	**%**	**%**
Female	803	52.5	733	50.4	51.8
Male	662	43.3	678	46.6	48.2
Other	1	0.1	0	0.0	-
Non-response	61	4.0	38	2.6	-
Multi-tick	3	0.2	5	0.3	-
Total	1,530	100.0	1,454	100	100

Table M2: Response rate by Age for 2017 Quantitative Test (weighted and unweighted) and Mid-2017 population estimates

	2017 Quantitative Test (weighted)		2017 Quantitative Test (unweighted)		Mid-2017 population estimates
Age group	**n**	**%**	**n**	**%**	**%**
16-24	99	6.8	39	2.7	13.2
25-34	322	22.2	109	7.5	16.4
35-44	210	14.5	159	10.9	14.7
45-54	252	17.3	219	15.1	17.6
55-64	218	15.0	329	22.6	15.7
65-74	176	12.1	351	24.1	12.5
75+	139	9.6	213	14.6	9.9
Non-response	34	2.3	33	2.3	-
Multi-ticks	3	0.2	2	0.1	-
Total	1,454	100	1,454	100.0	100

Table M3: Response rates by household composition for 2017 Quantitative Test (weighted and unweighted)

	Weighted		Unweighted	
Type of household	**n**	**%**	**n**	**%**
Single person household	366	25.2	388	26.7
Lone parent household with children	78	5.4	48	3.3
Couple household without children	529	36.4	581	40.0
Couple household with children	356	24.5	321	22.1
Other - without children	80	5.5	66	4.5
Other - with children	21	1.5	22	1.5
Non-response	23	1.6	28	1.9
Total	**1,454**	**100**	**1,454**	**100**

Table M4: Response rates by SIMD for 2017 Quantitative Test (weighted and unweighted)

	Unweighted		Weighted	
SIMD	**n**	**%**	**n**	**%**
1 – most deprived	204	14.0	341	23.5
2	272	18.7	283	19.5
3	310	21.3	265	18.2
4	318	21.9	293	20.1
5 – least deprived	350	24.1	272	18.7
Total	1,454	100	1,454	100

Table M5: Response by Urban/Rural (6-fold classification, unweighted and weighted)

	unweighted		weighted	
Urban/Rural	*n*	*%*	*n*	*%*
Accessible Rural	438	30.1	561	38.6
Accessible Small Towns	461	31.7	494.	34.0
Large Urban Areas	157	10.8	118	8.1
Other Urban Areas	57	3.9	45	3.1
Remote Rural	239	16.4	160	11.0
Remote Small Towns	102	7.0	76	5.2
Total	**1,454**	**100**	**1,454**	**100**

Table M6: Item non-response rate to questions in the household section of the questionnaire and 2011 Census non-response rates (weighted)

Question[14]	2017 Item non-response (%)	2011 Census non-response (if applicable) (%)[15]
Q2. Size of household	1.2	N/A
Q4. Household composition	1.6	N/A
Q5. Household income	7.7	N/A
Q6. Central heating*	2.8	1.6
Q7. Tenure*	2.7	1.5
Q8. Landlord type	0.5	1.8

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[14] * Questions that have changed in content and/or structure compared to the equivalent 2011 Census question.
[15] N/A is noted where this question was not a 2011 Census question.

Table M7: Item non-response rate to questions in individual section of the questionnaire (weighted)

Question[16]	2017 Item non-response (%)	2011 Census non-response (if applicable) (%)[17]
Q9. Age	2.3	0.7
Q10. Non-binary sex*	2.6	0.8
Q11. Trans status	4.8	N/A
Q12. Marital status	2.9	2.3
Q13. Sexual orientation	6.8	N/A
Q14. Student status*	4.1	5.5
Q15. Health conditions	11.2	15.2
Q16. Country of birth	3.0	2
Q17. Passports held	3.3	N/A
Q18a. Understand English *	3.5	2.7
Q18b. Speak English *	5.7	N/A
Q18c. Read English*	5.6	N/A
Q18d. Write English*	5.6	N/A
Q19a. Scottish Gaelic ability	11.1	N/A
Q19b. Scots language ability	9.1	N/A
Q20. British Sign Language	4.1	N/A
Q21. Main language*	3.6	3.9
Q22. National Identity	3.3	1.6
Q23. Ethnic group	3.9	2.1
Q24. Religion	6.1	7
Q25. Armed forces service	3.8	N/A
Q26. Work or study address	8.7	8.5
Q27. Method of transport to work or study	1.1	2.2
Q28. Qualifications	6.9	6.5

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[16] * Questions that have changed in content and/or structure compared to the equivalent 2011 Census question.
[17] N/A is noted where this question was not a 2011 Census question.